

CLAIMS

1. A process for preparing spherical particles based on polyamide with a mean diameter of less than 1 mm, comprising the following steps:
 - a) preparing a dispersion of a first liquid comprising polyamide monomers, in a second inert liquid
 - b) polymerizing the monomers by polycondensation and/or polyaddition by heating the reaction medium and maintaining the heating at a temperature below the melting point of the polyamide with the desired degree of polymerization
 - c) optionally decompressing the reaction medium to atmospheric pressure
 - d) optionally gradually cooling the reaction medium
 - e) recovering the particles.
2. The process as claimed in claim 1, characterized in that the first liquid consists of polyamide monomers.
3. The process as claimed in claim 1 or 2, characterized in that the first liquid comprises molten monomers or a solution of monomers in a solvent.
4. The process as claimed in claim 3, characterized in that the solvent is water.
5. The process as claimed in one of the preceding claims, characterized in that the monomers are chosen from caprolactam, adipic acid or hexamethylenediamine.

6. The process as claimed in one of the preceding claims, characterized in that the second liquid has a boiling point greater than 150°C at atmospheric pressure.
 - 5 7. The process as claimed in one of the preceding claims, characterized in that the second liquid is an aliphatic hydrocarbon or a mixture of aliphatic hydrocarbons.
 - 10 8. The process as claimed in one of the preceding claims, characterized in that the ratio between the volume of the first liquid and the volume of the second liquid is greater than or equal to 0.5, preferably greater than or equal to 0.75.
 - 15 9. The process as claimed in one of the preceding claims, characterized in that the pressure during step b) is between 1 and 20 bar.
 - 20 10. The process as claimed in one of the preceding claims, characterized in that the temperature during step b) is greater than or equal to 150°C.
 - 25 11. The process as claimed in one of the preceding claims, characterized in that an azeotrope of the second liquid, of the solvent for the monomers of the first liquid and of the by-product of polycondensation is distilled during step b).
 - 30 12. The process as claimed in one of the preceding claims, characterized in that the duration of step b) is between 10 and 60 minutes.
 - 35 13. The process as claimed in one of the preceding claims, characterized in that the temperature during step c) is less than the melting point of the polyamide with the desired degree of polymerization.
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14. The process as claimed in one of the preceding claims, characterized in that it comprises a step f) for washing the spherical polyamide particles.
- 5 15. The process as claimed in one of the preceding claims, characterized in that it comprises a step g) for drying the spherical polyamide particles.
- 10 16. The process as claimed in one of the preceding claims, characterized in that steps a) to g) are successive.
- 15 17. The process as claimed in one of the preceding claims, characterized in that the spherical particles have a mean diameter of less than 100 μm .
- 20 18. The process as claimed in claim 17, characterized in that the spherical particles have a mean diameter of less than or equal to 30 μm , advantageously less than or equal to 10 μm , preferably less than or equal to 5 μm .